

In the Claims

Please cancel claims 12, 22 and 30.

Please amend claims 10, 13, 14, 21 and 23 as follows:

1 10. (Currently Amended) An apparatus for selectively forming a silicide  
2 comprising:

3 a semiconductor substrate having a surface, a portion of said surface having  
4 silicon thereon and a portion of said surface having an insulator thereon, said  
5 surface further having an oxide thereover;

6 a chamber comprising a plurality of interior chambers, at least one interior  
7 chamber adapted to remove said oxide from said surface of said substrate  
8 while under a continuous vacuum, and at least one interior chamber adapted  
9 to deposit a metal on said surface of said substrate while under said  
10 continuous vacuum;

11 at least one workpiece holder within said chamber adapted to hold said  
12 substrate;

13 at least one pump adapted to evacuate said chamber to maintain said  
14 continuous vacuum in said chamber;

15 at least one line operatively connected between said at least one pump and said  
16 chamber for evacuating said chamber;

17 at least one input line adapted to provide a chemical agent into said chamber  
18 while in said continuous vacuum, said chemical agent adapted to remove  
19 said oxide from said surface of said substrate;  
20 at least one output line adapted to remove said cleaning agent and said removed  
21 oxide from said chamber;  
22 a reactor in said chamber, said reactor adapted to deposit asaid metal onto said  
23 silicon and insulator portions on said substrate surface while in said  
24 continuous vacuum;  
25 a heating element, said heating element adapted to heat said substrate to an  
26 elevated temperature to form a silicide on said substrate surface over the  
27 silicon portion by reaction with the metal deposited thereon, while the metal  
28 remains unreacted over the insulator portion; and  
29 an etchant to remove unreacted metal from the substrate surface while leaving  
30 said silicide over portions of said semiconductor substrate.

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1 12. (Canceled.)

1 13. (Currently Amended) The apparatus of claim ~~12~~10 further comprising at  
2 least one interior chamber adapted to heat said substrate.

1 14. (Currently Amended) The apparatus of claim ~~12~~10 wherein said apparatus is  
2 adapted to transfer said substrate between said interior chamber adapted to remove  
3 said oxide from said surface of said substrate and said interior chamber adapted to  
4 deposit said metal on said surface of said substrate without breaking said continuous  
5 vacuum.

1 15. (Original) The apparatus of claim 14 wherein said substrate is a silicon  
2 substrate.

1 16. (Original) The apparatus of claim 15 wherein said apparatus is adapted to  
2 remove said oxide from said surface of said substrate using a nitrogen trifluoride  
3 cleaning process.

1 17. (Original) The apparatus of claim 16 wherein said metal is cobalt.

1 18. (Original) The apparatus of claim 17 wherein said interior chamber adapted  
2 to deposit said metal on said surface of said substrate is a vapor sputtering device.

1 19. (Original) The apparatus of claim 18 wherein said apparatus is further  
2 adapted to transfer said substrate to said heating chamber from said metal  
3 deposition chamber.

1 20. (Original) The apparatus of claim 19 wherein said silicide is cobalt silicide.

1 21. (Currently Amended) A system for selectively forming a silicide on a surface  
2 of a semiconductor substrate comprising:

3 said semiconductor substrate having said surface, a portion of said surface  
4 having silicon thereon and a portion of said surface having an insulator  
5 thereon, said surface further having an oxide thereover;

6 a chamber comprising a plurality of interior chambers, at least one interior  
7 chamber adapted to remove said oxide from said surface of said substrate  
8 while under a continuous vacuum, and at least one interior chamber adapted  
9 to deposit a metal on said surface of said substrate while under said  
10 continuous vacuum;

11 at least one pump adapted to evacuate said chamber to maintain said  
12 continuous vacuum in said chamber;

13 a chemical agent input into said chamber adapted to remove said oxide from  
14 said surface of said substrate while said chamber is under said continuous  
15 vacuum;

16 a reactor in said chamber, said reactor adapted to deposit said metal onto said  
17 silicon and insulator portions on said substrate surface while under said  
18 continuous vacuum;

19 a heating element, said heating element adapted to heat said substrate to an  
20 elevated temperature to form a silicide on said substrate surface over the  
21 silicon portion by reaction with the metal deposited thereon, while the metal  
22 remains unreacted over the insulator portion; and  
23 an etchant to remove unreacted metal from the substrate surface while leaving  
24 said silicide over portions of said semiconductor substrate.

5/27  
22. (Canceled.)

1 23. (Currently Amended) The system of claim 2122 wherein said apparatus is  
2 adapted to transfer said substrate between said interior chamber adapted to remove  
3 said oxide from said surface of said substrate and said interior chamber adapted to  
4 deposit said metal on said surface of said substrate without breaking said continuous  
5 vacuum.

1 24. (Previously Added) The system of claim 21 wherein said metal is cobalt.

1 25. (Previously Added) The system of claim 21 wherein said chemical agent is  
2 selected from the group consisting of nitrogen trifluoride and argon.

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1 26. (Previously Added) The system of claim 21 wherein said reactor for  
2 depositing said metal on said surface of said substrate is a vapor sputtering device.

1 27. (Previously Added) The system of claim 21 wherein said heating element  
2 resides within said chamber.

5 1 28. (Previously Added) The system of claim 21 wherein said heating element is  
2 external thereto said chamber.

1 29. (Previously Added) The system of claim 21 wherein said unreacted cobalt is  
2 removed using an etchant comprising hydrogen peroxide and sulfuric acid.

1 30. (Canceled.)